

A REVIEW ON: DRUG UTILIZATION STUDY OF PSYCHOTROPIC DRUGS

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Abstract

Antipsychotics, antidepressants, and benzodiazepines are examples of psychotropic medicines. Mental disorders are the group of disease of brain such as anxiety disorder, bipolar disorder, schizophrenia, eating disorder etc. According to WHO, drug utilization evaluation is the marketing, prescription, distribution and use of medicines in a society, with definite emphasis on the social, economic and medical implications. Atypical antipsychotics were prescribed more frequently such as olanzapine was prescribed forty seven percentage of the time, risperidone was given 27.49 percent of the time, clozapine was prescribed 13.06 percent of the time. Antipsychotics, mood stabilisers and antidepressants were found to be the most widely used medicines in the study population. investigation it was found that atypical antipsychotic drugs such as olanzapine and selective serotonin reuptake inhibitor mostly used by psychiatric patients .these drugs used as first line treatment and produce less side effects that helps in improvement patient quality of life.

Keywords : Mental disorder, Psychotropic drugs, Patients, Treatment.

INTRODUCTION

Antipsychotics, antidepressants, and benzodiazepines are examples of psychotropic medicines that impact brain functions involved with mental processes and behaviour (Whitaker, 2005).Mental illnesses are major public health concern and a leading source of morbidity.Four of the top 10 health diseases in the world are mental disorders, which add to the Disability Adjusted Life Years (DALYs). Mental disorders are group of disease

of brain which includes anxiety disorder, insomnia, bipolar disorder, schizophrenia, eating disorder etc.¹ Mental illness is connected with high levels of health-care consumption and expenses, which are borne

primarily by the patient in developing nations.² Psychopharmacology is a fast growing discipline that is challenging standard psychiatric management and research, and is forever looks for new and enhanced medicines to treat psychiatric diseases. Psychiatrists are thus regularly exposed to innovative drugs that are claimed to be secure and more efficient.³ While psychotropic medications have had a remarkable impact on psychiatric practise that can legally be described as revolutionary, their use and consequences on real-world effectiveness and safety in actual clinical practise require ongoing research.⁴

Drug Utilization Research (DUR) was described by the World Health Organization (WHO) in 1977 as “the marketing, prescription, distribution and use of medicines in a society, with definite emphasis on the social, economic and medical implications”.² The increased interest in DUR has emerge from recognition of the virtual report in the marketing of pharmaceuticals, the more variances in the patterns of drug prescribing and use, and the increasing worry over the expense of drugs.⁵

A wide range of psychotropic medications are available for the treatment of psychiatric diseases.² The emergence of newer medications such as Selective Serotonin Reuptake Inhibitors (SSRIs) and atypical antipsychotics has drastically altered pharmacological therapy regimens during the last two decades.⁵

Classification of psychotropic drugs

Types	Mechanism of action	Examples
1. Antidepressants		
MAOI's	Reversible or irreversible deactivation of monoamine oxidase	Meclobemide, Phenelzine
NaSSAs	Enhance both adrenergic and serotonergic neurotransmission	Mianserin and Mirtazapine
NARI	Increasing noradrenalin level	Reboxetine
SNRIs	Inhibition of serotonin and norepinephrine reuptake resulting in increased levels of their extracellular concentrations	Duloxetine, Venlafaxine
Tricyclic antidepressants	Inhibit the reuptake of 5-HT and noradrenalin	Imipramine and Amitriptyline

SSRI	Reuptake inhibitor	Citalopram, paroxetine, Sertraline and fluoxetine
2.Antipsychotics		
Atypical antipsychotics	All work on dopamine pathway with variations in their affinity to dopamine receptors	Zotepine,risperidone,quetiapine, Olanzapine,clotiapine and paliperidone.
Typical antipsychotics	Block dopamine receptors	Flupenthixol,chlorpromazine and haloperidol
3.Mood stabilizers		
Sodium valproate	Slows the breakdown of the inhibitory neurotransmitter GABA	
Carbamazepine	Blocks neuronal sodium channels	
Lithium	Inhibits the formation of cAMP and alternates the formation of various inositol lipid-derived mediators	

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- Manju K C et al. (2019), Drug Utilization Trend of Psychotropic Drugs in the Psychiatric Outpatient Department of Crimson Hospital,Rupndehi. There were 305 psychotropic medicines out of 545 total.The average number of medications prescribed and the average number of psychotropic drugs prescribed were 2.84 and 1.59, respectively.Only 1.84 percent of medications were prescribed by generic name, with the remaining 29.54 percent coming from Nepal's critical medicine list.Clonazepam was the most usually prescribed medicine, followed by escitalopram. Clonazepam, olanzapine and escitalopram were the most widely given medications for anxiety disorders, schizophrenia and depression respectively.Polytherapy decreased as the number of medications

used, the percentage of drug-drug interactions increased, and the patient's age increased. Psychotropic drug polytherapy was more common, and we discovered that 9.83 percent of drug-drug interactions were severe. Psychotropic medicines were most commonly prescribed, with clonazepam having the greatest rate of prescriptions. Prescriptions from the essential medicine list and generic pharmaceuticals, as well as a reduction in the number of drugs per prescription, can enhance the prescribing pattern.¹

- Aashal Shah et al. (2019), Drug utilization study of antipsychotic drugs in the psychiatry outpatient department of a tertiary care hospital. A total 2115 medications were prescribed in 631 prescriptions, with antipsychotics accounting for 804 (38.01%). Schizophrenia was most prevalent diagnosis (55.31 percent). The most commonly coprescribed medication group was sedative-hypnotics (30.23 percent). Atypical antipsychotics were prescribed more frequently: olanzapine was prescribed 47.39 percent of the time, risperidone was given 27.49 percent of the time, clozapine was prescribed 13.06 percent of the time, and others were prescribed 12.06 percent of the time. The number of antipsychotics prescribed per prescription is 1.29 0.53; antipsychotics are prescribed by generic name 95.02 percent of the time; antipsychotics are prescribed from the the WHO essential medicines list 43.66 percent of the time; antipsychotics are prescribed from the National List of Essential Medicines 47.89 percent of the time; antipsychotic injections are prescribed 0.62 percent of the time; prescriptions of fixed-drug combinations are prescribed 0.50 percent of the time; and antipsychotics are prescribed 0.014mg. Trifluoperazine, amisulpride, and clozapine had PDD-to-DDD ratios of less than one, whereas risperidone and haloper had PDD-to-DDD ratios of more than one, and olanzapine and aripiprazole had PDD-to-DDD ratios of more than one. The antipsychotic olanzapine, a second-generation antipsychotic, was the most usually given antipsychotic.⁴
- K.G. Piparva et al. (2011), Drug Utilization Study of Psychotropic Drugs in Outdoor Patients in a Teaching Hospital. A total of 2.96 psychotropic medicines were prescribed per patient. Anti-anxiety medicines were the most usually prescribed psychotropic drugs in various psychiatric diseases (82.83 percent). Antipsychotic medications were used in 70.15 percent of the cases. Atypical antipsychotic medicines were prescribed more frequently (43.83 percent) than traditional antipsychotic drugs (26.32 percent). In serious depression, the prescribing frequency of SSRI's (36.66%) was higher than that of tricyclic antidepressants (21.96%) and atypical antidepressant medications (1.83%). Only bipolar mood disorders were prescribed mood stabilisers. In as many as 88.15 percent of patients taking antipsychotic drugs, a central anticholinergic drug was also administered. Anti-anxiety medication (Benzodiazepine (BZD)) was widely used in a variety of psychiatric diseases. The rational use of BZD necessitates thought/attention to the dosage and length of use, as well as medication interactions with other psychotropics. The routine use of anticholinergic medications, as well as atypical antipsychotic medicines, is unjustifiable.³

- Karan B. Thakkar et al. (2013) A Drug Utilization Study of Psychotropic Drugs Prescribed in the Psychiatry Outpatient Department of a Tertiary Care Hospital. 1074 (88.25%) of 600 prescriptions were for psychotropic drugs. Trifluoperazine + trihexiphenidyl (63.9%), amitriptyline (34.9%), diazepam (23.8%) and carbamazepine (17.2%) were the most commonly given medications for bipolar disorders, depression, anxiety disorders and schizophrenia, respectively. Levosulpiride (1.7 percent), lithium (1.3 percent), bupropion (4.7 percent), and clozapine (1.9 percent) were the least commonly prescribed medicines, respectively. Three medicines – haloperidol, amitriptyline and pimozide – had a PDD/DDD ratio of one. The hospital was responsible for 116, or 65.2 percent of the total expenditure. Clozapine had a cost index of 11.2. Overall, reasonable prescription guidelines were followed. More SSRIs should be included in the hospital's medicine list. The use of first-generation/typical antipsychotics as the first line of treatment was in accordance with current recommendations. Anticholinergics should only be utilised in the most extreme cases of antipsychotic patients. The use of diazepam should be limited and used for brief periods of time.²
- Sunita Jaiprakash Ramanand et al. (2020), A drug utilization study of psychotropic drugs in indoor patients of psychiatry department in a tertiary care hospital. Psychotropic medications accounted for 61.98 percent of 300 prescriptions, with an average of five pills per prescription. Drugs prescribed by essential drug list and generic name accounted for 60.9 percent and 52.93 percent of all prescriptions, respectively. Schizophrenia was most prevalent diagnosis (55.6%), followed by mood disorders (26.6 percent). Sodium valproate (71.4%), escitalopram (51.6%) and olanzapine (71.85%) were the most widely given medicines for bipolar disorder, depression and schizophrenia respectively. The majority of the medications were utilized in accordance with the Indian Psychiatric Society's standard standards. It is necessary to raise the percentage of pharmaceuticals prescribed by generic names and from the National List of Essential Medicines (NLEM). Olanzapine was a regularly prescribed psychotropic drug that was not included in NLEM.⁶
- Mohanraj Rathinavelu Mudhaliar et al. (2017), Psychotropic drug utilization in psychiatric outpatient department of a tertiary care teaching hospital in India. Out of 150 cases analysed, 46 percent were of schizophrenia, with males (60.67 percent) having a higher rate of psychiatric disease and the majority of patients being between the ages of 29 and 39. (54.67 percent). Psychotropic medications accounted for 72.67 percent of the 355 prescription pharmaceuticals in this study. According to World Health Organization/International Network for Rational Use of Drugs (INRUD) drug use indicators, average number of psychotropic drugs per prescription (1.72%), the average number of drugs per prescription (2.37%), and psychotropic drugs prescribed as Fixed Dose Combinations (FDCs) (26.36%), were all higher than the national averages (91.08 percent). According to World Health Organization (WHO) /International Network for Rational Use of Drugs (INRUD) drug use indicators, average number of psychotropic drugs per prescription (1.72%), average number of

medications per prescription (2.37%), percentage of drugs prescribed by generic name and psychotropic drugs prescribed as Fixed Dose Combinations (FDCs) (26.36), were all higher than the national averages (91.08%). In our study, 48.09 percent of psychotropic drugs were used to treat schizophrenia, and diazepam (17.06 percent) was the only psychotropic medication used to treat all three psychiatric disorders. The study also revealed that psychotropic drugs were used more frequently as FDCs (25.98 percent) in the treatment of schizophrenia. The study argued for a more reasonable use of psychotropic medicines, with less variances related to patients' socioeconomic situation and healthcare professionals' prescribing practices.⁵

- Neeraj Pant et al. (2021), Drug Utilization Evaluation of psychotropic drugs in the psychiatry in-patient department of Tertiary care hospital. A total of 194 psychotropic medicines were prescribed to 100 study participants. Sedatives and hypnotics accounted for 38.14 percent of the 194 psychotropic medicines studied, while antipsychotics accounted for 36.08 percent, antidepressants for 18.55 percent, and mood stabilisers for 7.21 percent. Antipsychotics, mood stabilisers and antidepressants were found to be the most widely used medicines in the study population, followed by sedatives, hypnotics and benzodiazepine. To promote patient safety and improve the quality of mental patients, future research evaluating the medication use evaluation of psychotropic drugs in large patient populations are desperately needed.⁷
- Adit Atul Deshmukh et al. (2020), A Study of Psychotropic Drugs Being Prescribed to the Patients Attending the Psychiatric Outpatient Department in a Tertiary Care Hospital. The average number of medications per prescription was 3.14 ± 1.18, whereas the average number of Psychotropic drugs per prescription was 2.27 ± 0.90. Generic names accounted for 84.35 percent of all prescriptions prescribed. National List of Essential Medicines 2015 and WHO Model List of Essential Medicines 2017 accounted for 43.89 percent and 41.67 percent of total prescriptions, respectively. The most regularly prescribed group of psychotropic medications was antipsychotics, with Olanzapine being the most commonly prescribed psychotropic drug. The hospital drugstore was responsible for 64.25 percent of all prescriptions. Drugs were prescribed judiciously and sensibly in this investigation. However, there was a need to increase the number of pharmaceuticals prescribed from essential drug lists. Aside from that, there was a need to expand the supply of regularly prescribed Psychotropic medications in the research institution's hospital drugstore.⁸

CONCLUSION

From all investigations it was found that atypical antipsychotic drugs such as olanzapine and selective serotonin reuptake inhibitor mostly used by psychiatric patients. These drugs used as first line treatment and produce less side effects that helps in improvement patient quality of life. Generic medicine are mostly prescribed by physician as compared to branded drugs according to National List of Essential Medicines. Clonazepam and other benzodiazepine medicine are also higher rate used by patients. Schizophrenia was

most prevalent diagnosis treated by seventy one sodium valproate , fifty percentage escitalopram and olanzapine (71.85%) were the most widely given medicines for bipolar disorder,depression . Anticholinergics should only be utilised in the most extreme cases of antipsychotic patients. The use of first-generation/typical antipsychotics as the first line of treatment was in accordance with current recommendations.

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